



Medical Coverage Policy

Effective Date.....05/15/2021
Next Review Date.....05/15/2022
Coverage Policy Number 0355

Liver and Liver-Kidney Transplantation

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Related Coverage Resources

- [Kidney Transplantation, Pancreas-Kidney Transplantation, and Pancreas Transplantation Alone](#)
- [Intestinal and Multivisceral Transplantation Transplantation Donor Charges](#)

INSTRUCTIONS FOR USE

The following Coverage Policy applies to health benefit plans administered by Cigna Companies. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make coverage determinations. References to standard benefit plan language and coverage determinations do not apply to those clients. Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document always supersedes the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Each coverage request should be reviewed on its own merits. Medical directors are expected to exercise clinical judgment and have discretion in making individual coverage determinations. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations.

Overview

This Coverage Policy addresses liver transplantation and simultaneous liver-kidney (SLK) transplantation.

Coverage Policy

Liver transplantation is considered medically necessary for an individual with ANY of the following indications:

- end-stage liver failure
- hepatocellular carcinoma and BOTH of the following criteria are met:
 - stage T2 lesion (single lesion ≤ 5 cm OR up to three separate lesions, none larger than 3 cm)
 - alpha-fetoprotein (AFP) level ≤ 1000 ng/mL
- hepatoblastoma which is confined to the liver
- metabolic disease with intact hepatic synthetic function (e.g., type I hyperoxaluria, familial homozygous hypercholesterolemia, familial amyloidosis)
- unresectable perihilar or hilar cholangiocarcinoma with ALL of the following:
 - measures ≤3cm in radial diameter
 - absence of intrahepatic or extrahepatic metastasis,

- without nodal disease
- neuroendocrine/gastroenteropancreatic (GEP) tumors with ALL of the following:
 - unresectable liver metastasis
 - prior complete resection of the primary GEP
 - absence of extrahepatic metastasis
 - failure to respond to medical and/or interventional treatment
 - severe hypoglycemia, poorly controlled hyperglycemia, cardiac distress, respiratory distress or other symptoms directly attributable to aberrant GEP tumor production of life-threatening hormones such as insulin, catecholamines, or histamine

Liver retransplantation is considered medically necessary for an individual considered to have a significant chance of success and who still meet eligibility criteria for primary transplantation for ANY of the following indications:

- primary graft failure
- hepatic artery thrombosis
- severe rejection
- recurrence of the disease which prompted the initial liver transplantation

Simultaneous liver-kidney (SLK) transplantation is considered medically necessary for an individual 18 years or older who meets medical necessity criteria for liver transplantation with ANY of the following indications:

- chronic kidney disease (CKD) with a measured or calculated glomerular filtration rate (GFR) \leq 60 mL/min for more than 90 consecutive days and ANY of the following:
 - receiving regularly administered dialysis as an end-stage renal disease (ESRD) patient in a hospital based, independent non-hospital based, or home setting
 - at the time of registration on the kidney waiting list, the individual's most recent measured or calculated creatinine clearance (CrCl) or GFR is \leq 30 mL/min
 - on a date after registration on the kidney waiting list, the individual's measured or calculated CrCl or GFR is \leq 30 mL/min
- sustained acute kidney injury and at least ONE of the following for the previous 6 weeks:
 - receiving dialysis at least once every 7 days
 - individual has a measured or calculated CrCl or GFR that is consistently \leq 25 mL/min
- a diagnosis of ANY of the following:
 - hyperoxaluria
 - atypical hemolytic uremic syndrome (HUS) from mutations in factor H or factor I
 - familial non-neuropathic systemic amyloidosis
 - methylmalonic aciduria

Liver transplantation is considered not medically necessary for an individual with ANY of the following contraindications to transplant surgery:

- ongoing alcohol abuse
- active extrahepatic malignancy that is expected to significantly limit future survival
- persistent, recurrent or unsuccessfully treated major or systemic infections
- systemic illness or comorbidities that would be expected to substantially negatively impact the successful completion and/or outcome of transplant surgery
- a pattern of demonstrated noncompliance which would place a transplanted organ at serious risk of failure
- human immunodeficiency virus (HIV) disease unless ALL of the following are noted:
 - cluster determinant (CD)4 count $>$ 100 cells/mm³
 - HIV-1 ribonucleic acid (RNA) undetectable
 - stable antiretroviral therapy for more than three months

- absence of serious complications associated with HIV disease (e.g., opportunistic infection, including aspergillus, tuberculosis, coccidioidomycosis; or resistant fungal infections; or Kaposi's sarcoma or other neoplasm)
- known intrahepatic or central cholangiocarcinoma
- donor with:
 - ongoing alcohol abuse
 - active malignancy, with the exception of non-melanotic skin cancer
 - persistent, recurrent or unsuccessfully treated infections, including hepatitis A, B or C or HIV
 - active systemic illness or serious comorbidities that would be expected to substantially negatively impact the successful completion and/or outcome of transplant surgery
 - active systemic illness that is likely to negatively affect survival

General Background

Liver transplantation is a complex operation requiring vascular reconstruction of the hepatic artery, the portal vein, and the hepatic venous system. Surgical techniques, which continue to evolve, include the orthotopic approach, involving replacement of the recipient liver with the donor liver, and the heterotopic approach in which the recipient liver is left in place and the donor liver is transplanted to an ectopic site. The whole liver, a reduced liver, or a liver segment may be transplanted depending on whether the donor is cadaveric (deceased) or living.

Living-donor liver transplantation was introduced as an alternative to deceased donor transplantation in response to the shortage of available cadaveric donor organs and is used for both adults and children. The graft from a living donor is more commonly from a relative of the recipient. The success of this type of transplantation is based on the ability of the liver to regenerate in both the donor and the recipient. The graft must be of adequate size in order to function in the recipient. The risks and benefits of using a living-donor graft must be considered as there are surgical risks to both the recipient and the donor. Benefits to the recipient include a reduced chance of mortality related to waiting for a cadaveric-donor organ, a reduced likelihood of primary non-function of the graft, and a potential decrease in the chance of graft rejection and the need for immunosuppression. Ethical concerns regarding living donor liver transplantation (LDLT) are related to the potential for donor morbidity and mortality. Opponents argue that it is unacceptable to place a healthy donor at risk of long-term debility or death. Donation of the left lateral segment or left lobe, used primarily in pediatric transplantation, is associated with a 5 to 10 percent chance of surgical complications and a mortality rate of less than 1 percent. The estimated mortality for right lobe donation, used in adult-to-adult LDLT, is around 0.5 percent.

In 2019, 8896 adult liver transplants were performed in the United States, more than in any previous year. This represented a 7.8% increase over the previous year and a 40.8% increase from 10 years earlier. The proportion of living-donor liver transplants continued to increase, making up 5.3% of all transplants in 2019. Most liver transplant recipients (69.6%) were aged >50 years, while 21.6% were ≥65 years; 8345 were adults (≥18 years), 442 (5.3%) of whom received living-donor transplants.

Of all adult liver transplants, 787 (9.4%) were multi-organ, most of which were simultaneous liver-kidney (SLK) transplants (704, compared with 347 in 2009).

The number of pediatric liver transplants has remained remarkably stable, with 551 transplants in 2019, of which 79 (14.3%) were living donor liver transplants. Recipients aged younger than 6 years underwent the highest proportion of transplants from living donors, 18.1%. In 2019, 22 programs were performing pediatric-only liver transplants, compared with 88 performing adult-only transplants and 33 performing transplants in both adults and children (Scientific Registry of Transplant Recipients [SRTR]).

Indications for Liver Transplantation

The number of adult liver transplants performed for alcohol-related liver disease and other/unknown disease (often non-alcoholic steatohepatitis) continued to rise in 2019, representing the two most common diagnoses and most transplants (65.1%). Liver transplants for HCC, the third most common diagnosis, decreased from 16.0% to 14.0% compared with 2018. The proportion of liver transplants performed for hepatitis C virus (HCV) continued to fall, representing only 7.3% of transplants, down from 24.0% in 2014. Patients with HCV may still be

represented among transplant recipients with a primary diagnosis of HCC. Cholestatic biliary atresia remained the leading cause of liver failure (33.5%) in pediatric transplant patients (SRTR).

Each liver transplant candidate is assigned a score that reflects the probability of death within a 3-month period as determined by the Model for End-Stage Liver Disease (MELD) scoring system or the Pediatric End Stage Liver Disease (PELD) scoring system. Liver candidates can also be assigned a priority status if the candidate meets the requirements for that status. The Liver and Intestinal Organ Transplantation Committee establishes guidelines for review of status and MELD or PELD score exception requests. If a candidate's transplant program believes that a candidate's current MELD or PELD score does not appropriately reflect the candidate's medical urgency for transplant, the transplant program may submit a MELD or PELD score exception request to the National Liver Review Board (NLRB).

Contraindications to Liver Transplantation

Many factors affect the outcome of solid organ transplantation. Prior to transplantation a rigorous assessment of the recipient's medical status should be conducted to confirm that transplantation constitutes the best option for managing the patient's disease and that no contraindications exist. According to the American Association for the Study of Liver Diseases (AASLD) and the American Society of Transplantation (Martin, et al., 2014), these are listed contraindications to liver transplant:

- MELD Score <15
- Severe cardiac or pulmonary disease
- AIDS
- Ongoing alcohol or illicit substance abuse
- Hepatocellular carcinoma with metastatic spread
- Uncontrolled sepsis
- Anatomic abnormality that precludes liver transplantation
- Intrahepatic Cholangiocarcinoma
- Extrahepatic malignancy
- Fulminant hepatic failure with sustained intracranial pressure >50 mm Hg or cerebral perfusion pressure <40 mm Hg*
- Hemangiosarcoma
- Persistent noncompliance
- Lack of adequate social support system

Human Immunodeficiency Virus (HIV)

Historically, HIV positivity has been considered a contraindication to solid organ transplantation. Access to liver transplantation was limited due to questions regarding life expectancy, clinical efficacy, and complications post-liver transplantation caused by interactions between antiviral therapy and immunosuppressive medications, and the increased risk of opportunistic infections.

More recently liver transplantation has become an acceptable treatment option for selected individuals who are HIV-positive. While overall survival is generally lower for individuals with HIV-infection compared to HIV-negative persons, mono-infection (i.e. HIV infection only) does not seem to be a significant risk factor for survival after liver transplantation. Orthotopic liver transplantation appears to be a safe therapeutic option in the short term for selected persons with HIV infection who have end-stage liver disease.

At present, AASLD criteria for liver transplantation include a CD 4 count >100/ μ L with a viral load anticipated to be completely suppressed at time of transplant (Martin, et al., 2014).

Donor Health

The health of the donor is also an important factor in liver transplantation outcomes. Hepatitis C virus (HCV) infection in the donor can affect the health of the donor liver, making individuals with persistent, recurrent, or untreated HCV infection unacceptable donors. Likewise, donor candidates who are hepatitis B surface antigen-(HbsAg) positive are also generally excluded from living-donor liver transplant donation to prevent transmission of disease to recipients. Factors which may negatively affect recipient outcomes after liver transplantation

including ongoing alcohol abuse, active systemic illness, and malignancy, are also considered contraindications to donation.

Retransplantation of the Liver

Retransplantation may be appropriate for carefully selected patients experiencing graft loss if an improvement in survival is expected; however, liver retransplantation should be used with discretion in the emergency setting and avoided in patients with little chance of success. In adults, the most common condition resulting in the need for retransplantation of the liver is recurrent infection with hepatitis C virus (HCV). Retransplantation in patients with HCV is controversial due to concerns of aggressive disease recurrence post retransplantation, and decreased patient and graft survival. Several retrospective cohort studies have examined the outcomes of patients retransplanted for recurrent HCV demonstrating lower patient and graft survival in some studies.

Simultaneous Liver-Kidney (SLK) transplantation

Since the introduction of the model for end-stage disease (MELD) score in 2002, there has been an increased use of SLK transplantation. Of all adult liver transplants in the US in 2019, 787 (9.4%) were multi-organ, most of which were simultaneous liver-kidney (SLK) transplants (704, compared with 347 in 2009). The reasons for this increase are multifactorial. First, allocation using the MELD score prioritizes patients with renal dysfunction, as the score incorporates both serum creatinine (Scr) and utilization of pretransplant renal replacement therapy (RRT). Second, superior outcomes have been observed following SLK in recipients with advanced pretransplant renal dysfunction. Finally, there has been a steady increase in the incidence of nonalcoholic fatty liver disease, resulting in more patients on the LT waiting list with this diagnosis (Pita, et al., 2019; Singal, et al., 2019; Miles, et al., 2018).

Jay et al. (2020) retrospectively analyzed UNOS data for adult liver transplant recipients between January 1, 2002 and December 31, 2018. The aim was to compare survival following simultaneous liver-kidney transplantation (SLK), early kidney after liver transplantation (KALT), and liver transplantation alone (LTA) in adult patients. Early KALT was defined as 60 to 365 days between liver and subsequent kidney transplantation (reflecting safety net listing criteria). There were 6,774 SLK, 120 KALT at 60 to 365 days, and 11,501 LTA. Early KALT had equivalent survival compared with SLK, both for all KALT (hazard ratio [HR] 0.58, p=0.05) and for deceased donor (DD) KALT only (HR 0.72, p=0.32). Simultaneous liver-kidney transplantation was associated with improved survival compared with LTA (HR 0.82, p < 0.01). Early KALT was associated with a greater reduction in mortality compared with LTA, but this was not significant (HR 0.58, p=0.05). The authors concluded that early KALT has equivalent survival compared with SLK transplantation, both for all KALT and for DD KALT only, supporting the promise of the “safety net.”

Professional Societies/Organizations

American Association for the Study of Liver Disease (AASLD)/ American Society of Transplantation (AST)

The AASLD and AST have published numerous joint guidelines, including some specific to liver transplantation. Evaluation for Liver Transplantation in Adults: 2013 Practice Guideline by the AASLD and the American Society of Transplantation (Marin, et al., 2014) states liver transplantation (LT) is indicated for severe acute or advanced chronic liver disease when the limits of medical therapy have been reached. Recognition of cirrhosis per se does not imply a need for LT. Many patients with cirrhosis in the absence of an index complication such as ascites or variceal hemorrhage will not develop hepatic decompensation, although patients with cirrhosis have diminished survival compared to the population as a whole. Acute liver failure complications of cirrhosis include ascites, chronic gastrointestinal blood loss due to portal hypertensive gastropathy, encephalopathy, liver cancer, refractory variceal hemorrhage and synthetic dysfunction.

Evaluation of the Pediatric Patient for Liver Transplantation: 2014 Practice Guideline by the American Association for the Study of Liver Diseases, American Society of Transplantation and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (Squires, et al., 2014) indications for LT include biliary atresia (32%), metabolic/genetic conditions (22%), acute liver failure (11%), cirrhosis (9%), liver tumor (9%), immune-mediated liver and biliary injury (4%), and other miscellaneous conditions (13%). Within these broad categories rest many rare conditions with myriad presentations.

American Society of Transplantation (AST)

The AST has several Key Position Statements, including but not limited to Deceased Organ Donation, Insurance Coverage for Living Donors, and Insurance Coverage for Transplant Recipients, and Living Organ Donation. They also publish guidelines, including Long-Term Medical Management of the Pediatric Patient after Liver Transplantation, Long-Term Management of the Successful Adult Liver Transplant, Curricular Guidelines for Training in Transplant Hepatology, and a Position paper on Indications for pediatric intestinal transplantation.

National Comprehensive Cancer Network Guidelines™ (NCCN Guidelines™)

The NCCN Guidelines (1.2021 — March 5, 2021) for Hepatobiliary Cancers address transplantation addresses liver transplantation as follows:

Principles of Surgery for HCC

Patients meeting the UNOS criteria (single lesion ≥ 2 cm and ≤ 5 cm, or 2 or 3 lesions ≥ 1 cm and ≤ 3 cm) should be considered for transplantation (cadaveric or living donation). There are patients whose tumor characteristics are marginally outside of the UNOS guidelines who should be considered for transplant. Furthermore, there are patients who are downstaged to within criteria that can also be considered for transplantation. Candidates are eligible for a standardized MELD exception if, before completing loco regional therapy, they have lesions that meet one of the following criteria:

- One lesions > 5 cm and ≤ 8 cm
- Two or three lesions that meet all of the following: each lesion ≤ 5 cm with at least one lesion > 3 cm and a total diameter of all lesions ≤ 8 cm
- Four or five lesions each < 3 cm and a total diameter of all lesions ≤ 8 cm

Patients with Child-Pugh Class A function, who fit UNOS criteria and are resectable, could be considered for resection or transplant. There is controversy over which initial strategy is preferable to treat such patients (NCCN, page HCC-D).

Extrahepatic cholangiocarcinoma /Presentation and Workup /Primary Treatment

Unresectable perihilar or hilar cholangiocarcinoma that measures ≤ 3 cm in radial diameter, with the absence of intrahepatic or extrahepatic metastasis, and without nodal disease, as well as those with primary sclerosing cholangitis may be considered for liver transplantation at a transplant center that has an UNOS-approved protocol for transplantation of cholangiocarcinoma (NCCN, page EXTRA-1).

Organ Procurement & Transplantation Network (OPTN)

The OPTN Policies document (OPTN, 3/15/2021) addresses Allocation of Livers and Liver-Intestines in Policy 9. Sections within the Policy address many topics related to liver transplant including Requirements for Hepatocellular Carcinoma (HCC) MELD or PELD Score Exceptions.

OPTN Policy 9.5.1.ii Eligible Candidates Definition of T2 Lesions

Candidates with T2 HCC lesions are eligible for a standardized MELD or PELD exception if they have an alpha-fetoprotein (AFP) level less than or equal to 1000 ng/mL and either of the following:

- One lesion greater than or equal to 2 cm and less than or equal to 5 cm in size.
- Two or three lesions each greater than or equal to 1 cm and less than or equal to 3 cm in size.

A candidate who has previously had an AFP level greater than 1000 ng/mL at any time must qualify for a standardized MELD or PELD exception according to Policy 9.5.1.iv: Candidates with Alpha-fetoprotein (AFP) Levels Greater than 1000.

OPTN Policy 9.5.1.iii Lesions Eligible for Downstaging Protocols

Candidates are eligible for a standardized MELD or PELD exception if, before completing local-regional therapy, they have lesions that meet *one* of the following criteria:

- One lesion greater than 5 cm and less than or equal to 8 cm
- Two or three lesions that meet all of the following:
 - at least one lesion greater than 3 cm
 - each lesion less than or equal to 5 cm, and
 - a total diameter of all lesions less than or equal to 8 cm

- Four or five lesions each less than 3 cm, and a total diameter of all lesions less than or equal to 8 cm

For candidates who meet the downstaging criteria above and then complete local-regional therapy, their residual lesions must subsequently meet the requirements for T2 lesions according to Policy 9.5.I.ii: Eligible Candidates Definition of T2 Lesions to be eligible for a standardized MELD or PELD exception. Downstaging to meet eligibility requirements for T2 lesions must be demonstrated by CT or MRI performed after local-regional therapy. Candidates with lesions that do not initially meet the downstaging protocol inclusion criteria who are later downstaged and then meet eligibility for T2 lesions are not automatically eligible for a standardized MELD or PELD exception and must be referred to the NLRB for consideration of a MELD or PELD exception.

OPTN Policy 9.5.I.iv Candidates with Alpha-fetoprotein (AFP) Levels Greater than 1000

Candidates with lesions meeting T2 criteria according to Policy 9.5.I.ii Eligible Candidates Definition of T2 Lesions but with an alpha-fetoprotein (AFP) level greater than 1000 ng/mL may be treated with local-regional therapy. If the candidate's AFP level falls below 500 ng/mL after treatment, the candidate is eligible for a standardized MELD or PELD exception as long as the candidate's AFP level remains below 500 ng/mL. Candidates with an AFP level greater than or equal to 500 ng/mL following local-regional therapy at any time must be referred to the NLRB for consideration of a MELD or PELD exception.

OPTN Table 9-17: Medical Eligibility Criteria for Liver-Kidney Allocation (3.15.2021 OPTN Policy)

If the candidate's transplant nephrologist confirms a diagnosis of:	Then the transplant program must report to the OPTN and document in the candidate's medical record:
Chronic kidney disease (CKD) with a measured or calculated glomerular filtration rate (GFR) less than or equal to 60 mL/min for greater than 90 consecutive days	<p>At least <i>one</i> of the following:</p> <ul style="list-style-type: none"> • That the candidate has begun regularly administered dialysis as an end-stage renal disease (ESRD) patient in a hospital based, independent non-hospital based, or home setting. • At the time of registration on the kidney waiting list, that the candidate's most recent measured or calculated creatinine clearance (CrCl) or GFR is less than or equal to 30 mL/min. • On a date after registration on the kidney waiting list, that the candidate's measured or calculated CrCl or GFR is less than or equal to 30 mL/min.
Sustained acute kidney injury	<p>At least <i>one</i> of the following, or a combination of <i>both</i> of the following, for the last 6 weeks:</p> <ul style="list-style-type: none"> • That the candidate has been on dialysis at least once every 7 days. • That the candidate has a measured or calculated CrCl or GFR less than or equal to 25 mL/min at least once every 7 days. <p>If the candidate's eligibility is not confirmed at least once every seven days for the last 6 weeks, the candidate is not eligible to receive a liver and a kidney from the same donor.</p>
Metabolic disease	<p>A diagnosis of at least <i>one</i> of the following:</p> <ul style="list-style-type: none"> • Hyperoxaluria • Atypical hemolytic uremic syndrome (HUS) from mutations in factor H or factor I • Familial non-neuropathic systemic amyloidosis • Methylmalonic aciduria

If the candidate's transplant nephrologist confirms a diagnosis of:	Then the transplant program must report to the OPTN and document in the candidate's medical record:

Kidney Disease: Improving Global Outcomes (KDIGO) 2020 Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation

The KDIGO guideline included recommendations regarding liver-kidney transplantation:

- Hyperoxaluria (oxalosis), primary and secondary 9.16.1: We suggest that candidates with primary hyperoxaluria type 1 be considered for combined or sequential liver-kidney transplantation (2C).
- Hepatitis C virus (HCV) 10.5.2.4.2: We recommend referring patients with HCV and decompensated cirrhosis for combined liver-kidney transplantation (1B) and deferring HCV treatment until after transplantation (1D).
- Liver disease 16.7.3: We recommend that candidates with cirrhosis or suspected cirrhosis be referred to a specialist with expertise in combined liver-kidney transplantation for evaluation (1B).

Description for grading recommendations:

Level 1: "We recommend". Most patients should receive the recommended course of action.

Level 2: "We suggest". Different choices will be appropriate for different patients. Each patient needs help to arrive at a management decision consistent with her or his values and preferences.

A: High Quality of Evidence. We are confident that the true effect lies close to that of the estimate of the effect.

B: Moderate Quality of Evidence. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

C: Low Quality of Evidence. The true effect may be substantially different from the estimate of the effect.

D: Very low Quality of Evidence. The estimate of effect is very uncertain, and often will be far from the truth (Chadban, et al., 2020).

Use Outside of the US

National Institute for Clinical Excellence (NICE): A NICE guidance on Living-donor liver transplantation (November 2015) notes that "Current evidence on the efficacy and safety of living-donor liver transplantation appears adequate to support the use of this procedure for suitable donors and recipients with normal arrangements for clinical governance, consent and audit, provided that the necessary regulatory requirements are followed".

Medicare Coverage Determinations

	Contractor	Determination Name/Number	Revision Effective Date
NCD	National	ADULT Liver Transplantation (260.1)	9/04/2012
LCD		No Local Coverage Determination found	

Note: Please review the current Medicare Policy for the most up-to-date information.

Coding/Billing Information

Note: 1) This list of codes may not be all-inclusive.

2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

CPT®* Codes	Description
47133	Donor hepatectomy (including cold preservation), from cadaver donor
47135	Liver allotransplantation, orthotopic, partial or whole, from cadaver or living donor, any age
47140	Donor hepatectomy (including cold preservation), from living donor; left lateral segment only (segments II and III)
47141	Donor hepatectomy (including cold preservation), from living donor; total left lobectomy (segments II, III and IV)
47142	Donor hepatectomy (including cold preservation), from living donor; total right lobectomy (segments V, VI, VII and VIII)
47143	Backbench standard preparation of cadaver donor whole liver graft prior to allotransplantation, including cholecystectomy, if necessary, and dissection and removal of surrounding soft tissues to prepare the vena cava, portal vein, hepatic artery, and common bile duct for implantation; without trisegment or lobe split
47144	Backbench standard preparation of cadaver donor whole liver graft prior to allotransplantation, including cholecystectomy, if necessary, and dissection and removal of surrounding soft tissues to prepare the vena cava, portal vein, hepatic artery, and common bile duct for implantation; with trisegment split of whole liver graft into 2 partial liver grafts (ie, left lateral segment [segments II and III] and right trisegment [segments I and IV through VIII])
47145	Backbench standard preparation of cadaver donor whole liver graft prior to allotransplantation, including cholecystectomy, if necessary, and dissection and removal of surrounding soft tissues to prepare the vena cava, portal vein, hepatic artery, and common bile duct for implantation; with lobe split of whole liver graft into 2 partial liver grafts (ie, left lobe [segments II, III, and IV] and right lobe [segments I and V through VIII])
47146	Backbench reconstruction of cadaver or living donor liver graft prior to allotransplantation; venous anastomosis, each
47147	Backbench reconstruction of cadaver or living donor liver graft prior to allotransplantation; arterial anastomosis, each

HCPCS Codes	Description
S2152	Solid organ(s), complete or segmental, single organ or combination of organs; deceased or living donor(s), procurement, transplantation, and related complications; including: drugs; supplies; hospitalization with outpatient follow-up; medical/surgical, diagnostic, emergency, and rehabilitative services, and the number of days of pre- and post-transplant care in the global definition

*Current Procedural Terminology (CPT®) ©2020 American Medical Association: Chicago, IL.

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